

### ABSTRACT OF THE DISCLOSURE

A circuit card assembly provides signal conditioning for signal discretes in control systems integrating a legacy, distributed processing architecture and a distributed I/O control system. Signal conditioning functions are determined, and the necessary physical circuits to perform the signal conditioning functions are incorporated into a circuit card. The Integrated Signal Conditioning Circuit Card Assembly is installed within the control system between legacy controllers and distributed I/O modules. The Integrated Signal Conditioning Circuit Card Assembly may leave any discrete signal unaltered or otherwise condition discretes with interrupt, interrupt on demand, over-ride, and monitor circuits. The centralized processor accesses and controls the conditioned discretes transmitted over a common hardware connection for use in system feedback and control.

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